

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A flash memory access apparatus, comprising:
a flash memory ~~with regions divided on the basis of~~ comprising a plurality of units, each of the units ~~that consists of~~ ~~predetermined~~ comprising a plurality of blocks; and
a flash memory controller,
wherein ~~when-if~~ a write operation is requested for a logical block number of the flash memory, the flash memory controller is configured to write data and meta-information in a physical block corresponding to a logical block with the logical block number if a previous write operation has not been performed for the logical block, and the flash memory controller is configured to perform a write operation for writing the data and the meta-information allocated to the logical block in a new physical block without changing flash memory state information written in a previous physical block corresponding to the logical block if the previous write operation has been performed for the logical block.

2. (original): The apparatus as claimed in claim 1, wherein the meta-information is written after the data of the logical block is written.

3. (original): The apparatus as claimed in claim 1, wherein the data and meta-information of the logical block are simultaneously written.

4. (currently amended): The apparatus as claimed in claim 1, wherein the meta-information ~~includes~~comprises the logical block number, and the flash memory state information indicating a state of the physical block as valid, deleted, or invalid.

5. (currently amended): The apparatus as claimed in claim 1, wherein the flash memory controller is configured to perform a recovery operation ~~for detecting which detects~~, during a scanning process, physical blocks for the logical block number ~~existing according to the write operation and for recovering recovers~~ from an error by determining a valid block for the logical block among the detected physical blocks.

6. (currently amended): The apparatus as claimed in claim 5, wherein the scanning process comprises reading a logical block number for each of the physical blocks by investigating the flash memory based on a latest accessed ~~lower~~-block, and investigating a field ~~of the logical block number~~ of a block allocation table corresponding to the read logical block number.

7. (currently amended): The apparatus as claimed in claim 6, wherein the investigating the field ~~of the logical block number~~ of the block allocation table ~~includes~~

comprises writing a state value of "1" in the field ~~of the logical block number of the block allocation table~~ if the state value has been "0," and detecting that the logical block number has been searched for through the previous physical block during the scanning process, if the state value is "1."

8. (currently amended): The apparatus as claimed in claim 5, wherein the ~~error recovery operation based on the determination on the valid block includes recovers from an error by determining a latest accessed physical block for the logical block number among the detected physical blocks according to priorities set during the scanning process, as the valid block, and rewriting flash memory state information written in the other physical blocks of the detected physical blocks as deleted.~~

9. (currently amended): The apparatus as claimed in claim 5, wherein the ~~error recovery operation is performed during the initializing the flash memory.~~

10. (currently amended): The apparatus as claimed in claim 5, wherein the ~~recovering from the error recovery operation is performed during reclaiming the flash memory in which wherein the reclaiming comprises moving data written in a predetermined unit of the flash memory are moved to a new unit.~~

11. (currently amended): A flash memory access method, comprising the steps of:

accessing the flash memory and searching for a currently writable physical block if a processor requests a write operation for a specific logical block number of the flash memory; and

writing data and meta-information in a physical block corresponding to a logical block with the logical block number if a previous write operation has not been performed for the logical block, and writing the data and the meta-information in a new physical block corresponding to the logical block without changing flash memory state information written in a previous physical block corresponding to the logical block the previous write operation has been performed for the logical block.

12. (original): The method as claimed in claim 11, wherein the meta-information is written after the data of the logical block is written.

13. (original): The method as claimed in claim 11, wherein the data and meta-information of the logical block are simultaneously written.

14. (currently amended): The method as claimed in claim 11, wherein the meta-information includes—comprises the logical block number, and the flash memory state information indicating a state of the physical block as valid, deleted, or invalid.

15. (currently amended): The method as claimed in claim 11, further comprising a recovery operation including—comprising detecting, during a scanning process, physical blocks

for the logical block number ~~existing according to the write operation~~ and of recovering from an error by determining a valid block for the logical block among the detected physical blocks.

16. (currently amended): The method as claimed in claim 15, wherein the scanning process comprises:

reading a logical block number for each of the physical blocks by investigating the flash memory based on a latest accessed ~~lower~~ block, and investigating a field ~~of the logical block number~~ of a block allocation table corresponding to the read logical block number; and

writing a state value of "1" in the field ~~of the logical block number~~ of the block allocation table if the state value has been "0," and detecting that the logical block number has been searched for through the previous physical block during the scanning process, if the state value is "1."

17. (currently amended): The method as claimed in claim 15, wherein the ~~recovery operation step recovering~~ comprises recovering from the error by determining a latest data written among data of a specific logical block number detected during reclaiming the flash memory, in which and wherein the reclaiming comprises moving data written in a predetermined unit of the flash memory ~~are moved~~ to a new unit.